

SUPPLEMENTARY MATERIAL

**Effects of traffic noise on calling activity of *Aplastodiscus leucopygius* (Anura,
Hylidae)**

BEATRIZ AZEVEDO CEZILA¹, RAONI REBOUÇAS^{2,3,4,*}, CYBELE SABINO
LISBOA⁵

¹ Fundação Parque Zoológico de São Paulo, Avenida Miguel Stefano, 4241, São Paulo
– SP, Brazil.

² Laboratório de História Natural de Anfíbios Brasileiros – LaHNAB,
Departamento de Biologia Animal, Instituto de Biologia, Universidade Estadual de
Campinas. Cidade Universitária Zeferino Vaz, Campinas – SP, Brazil.

³ Laboratório de Ecologia Evolutiva de Anfíbios, Departamento de Zoologia, Instituto
de Ciências Biológicas, Universidade Federal de Juiz de Fora, Juiz de Fora, Minas
Gerais, 36036-900, Brazil

⁴ Laboratório de Estudos Cromossômicos – LabEsC, Departamento de Biologia
Estrutural e Funcional, Instituto de Biologia, Universidade Estadual de Campinas.
Cidade Universitária Zeferino Vaz, Campinas – SP, Brazil.

⁵ Zoológico de São Paulo – Reserva Paulista, Avenida Miguel Stefano, 4241, São Paulo
– SP, Brazil.

*corresponding author: raonisreboucas@gmail.com

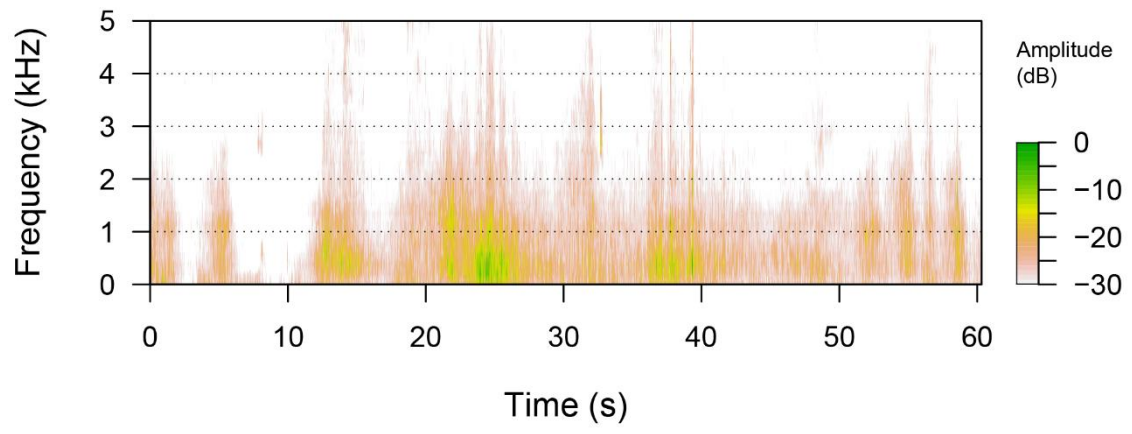


Figure S1. Spectrogram of noise used in the playback trial.

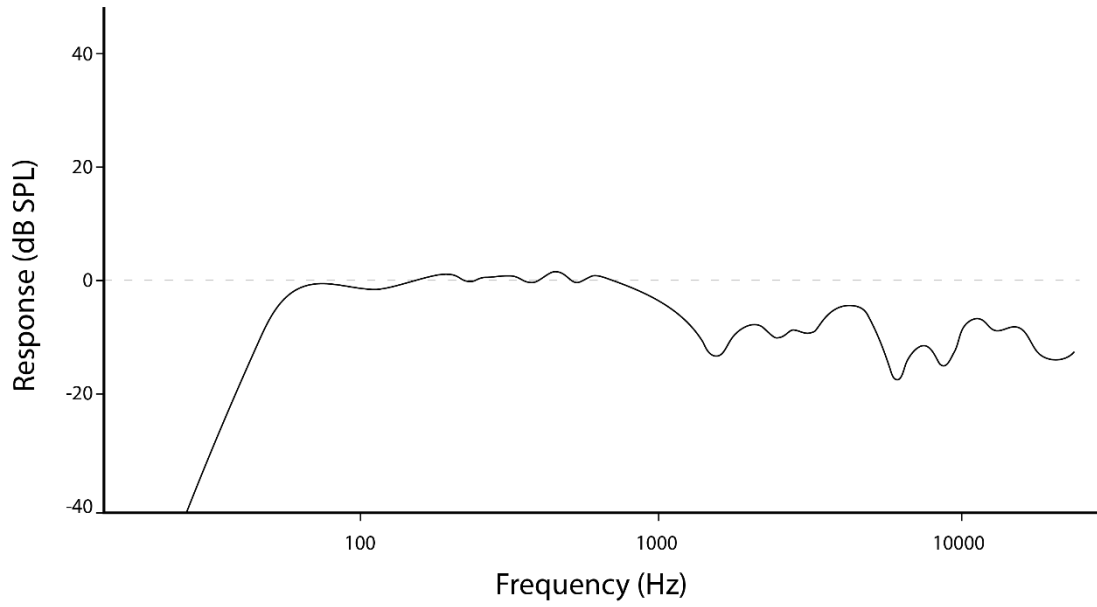
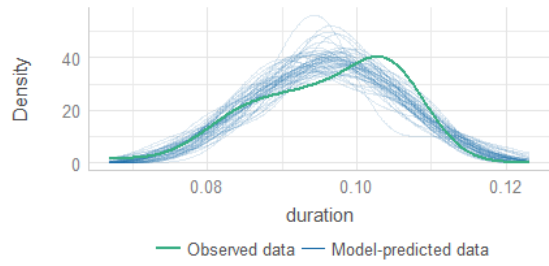


Figure S2. Frequency response of JBL Extreme speaker in relation to Sound Pressure Level (SPL).

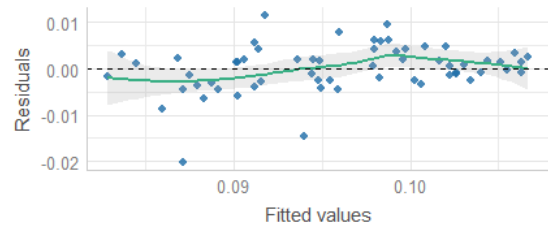
Posterior Predictive Check

Model-predicted lines should resemble observed data line



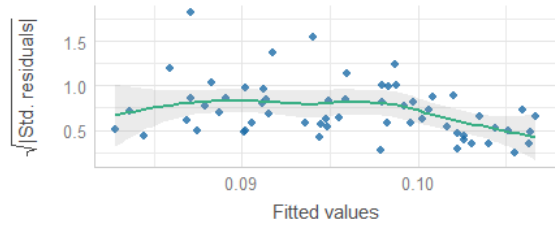
Linearity

Reference line should be flat and horizontal



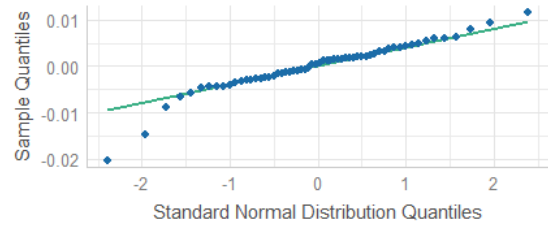
Homogeneity of Variance

Reference line should be flat and horizontal



Normality of Residuals

Dots should fall along the line



Normality of Random Effects (individual)

Dots should be plotted along the line

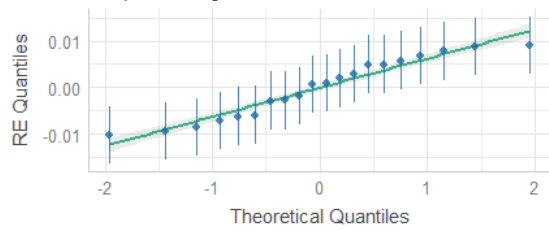


Figure S3. Performance of the model: call duration \sim exp + (1|individual).

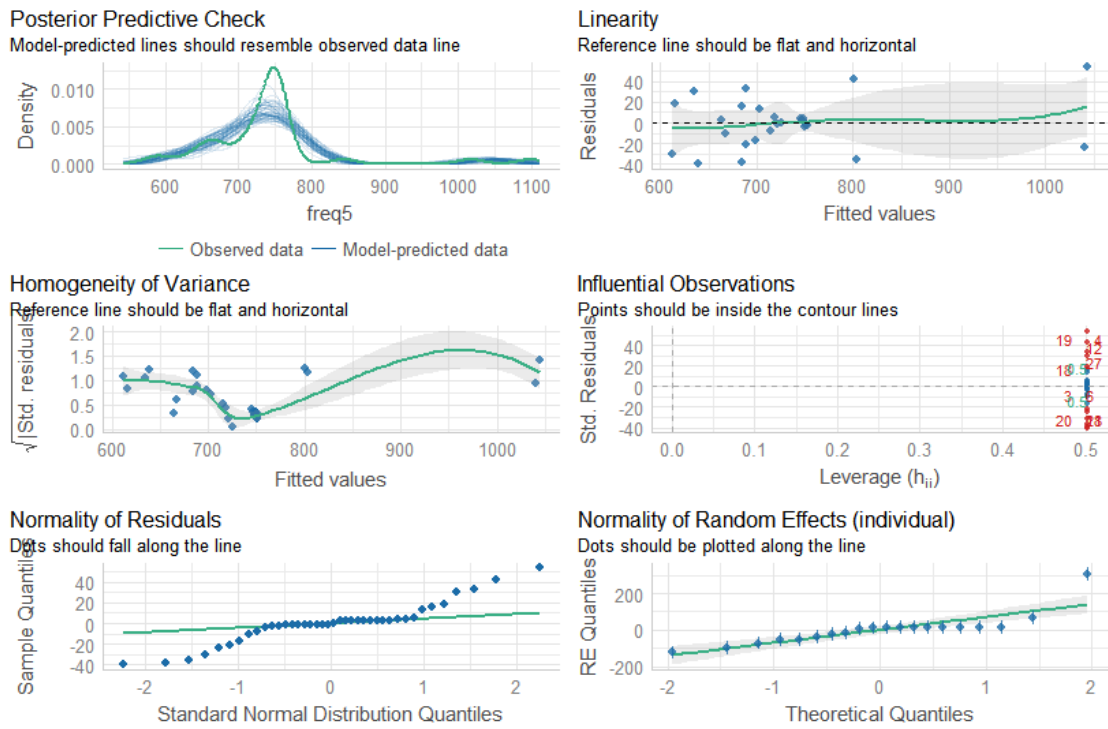
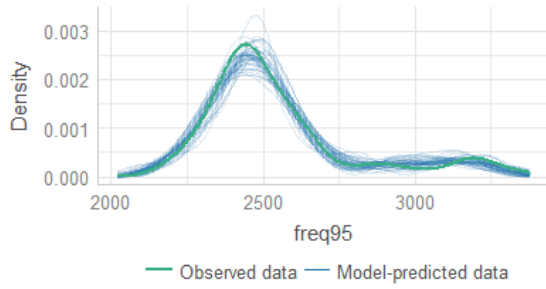


Figure S4. Performance of the model: minimum frequency $\sim \exp + (1|individual)$.

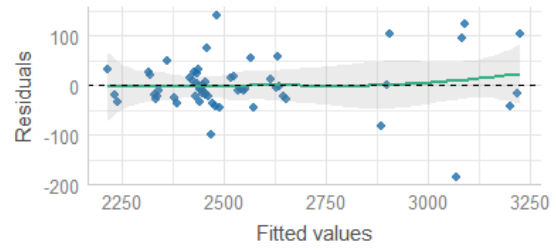
Posterior Predictive Check

Model-predicted lines should resemble observed data line



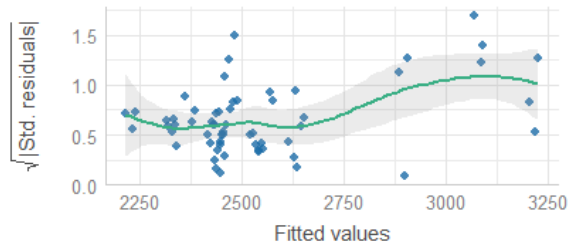
Linearity

Reference line should be flat and horizontal



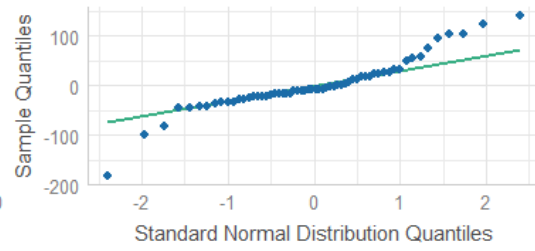
Homogeneity of Variance

Reference line should be flat and horizontal



Normality of Residuals

Dots should fall along the line



Normality of Random Effects (individual)

Dots should be plotted along the line

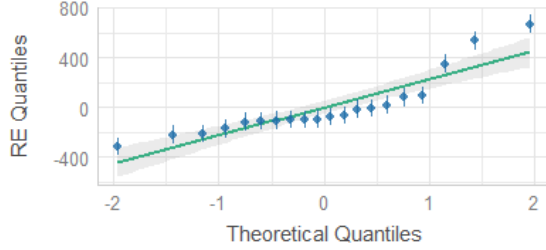
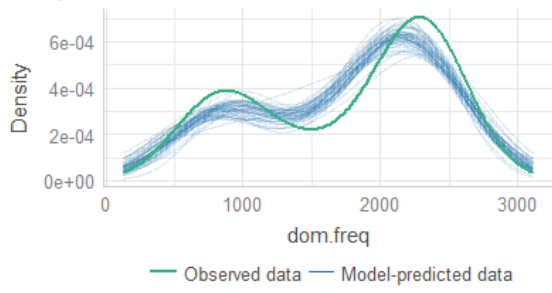


Figure S5. Performance of the model: maximum frequency $\sim \exp + (1|\text{individual})$.

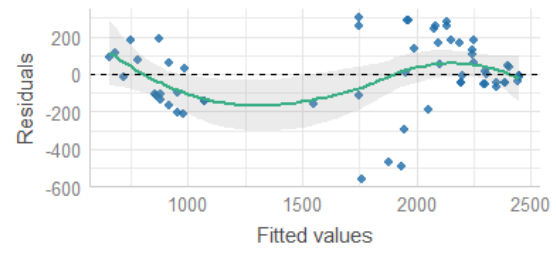
Posterior Predictive Check

Model-predicted lines should resemble observed data line



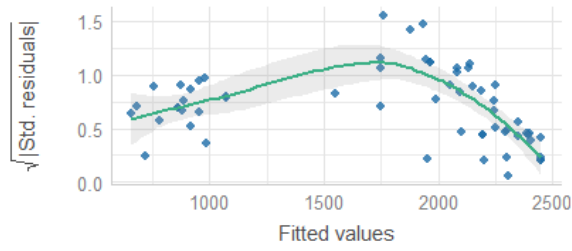
Linearity

Reference line should be flat and horizontal



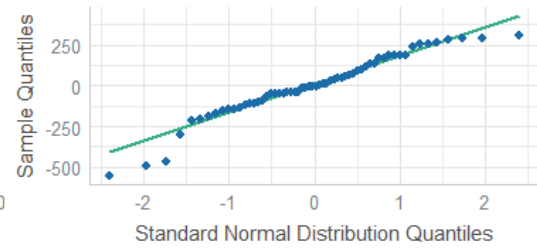
Homogeneity of Variance

Reference line should be flat and horizontal



Normality of Residuals

Dots should fall along the line



Normality of Random Effects (individual)

Dots should be plotted along the line

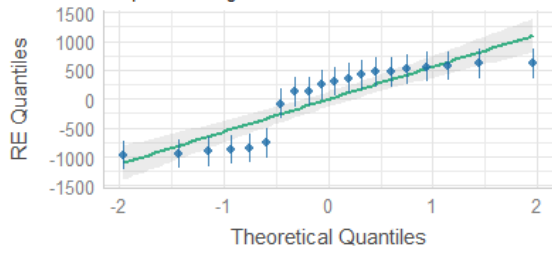
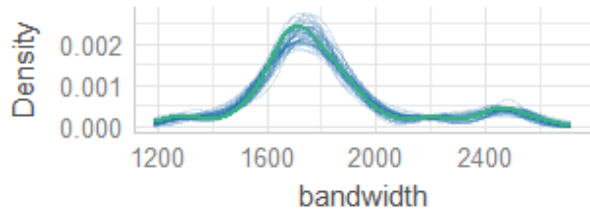


Figure S6. Performance of the model: dominant frequency $\sim \exp + (1|\text{individual})$.

Posterior Predictive Check

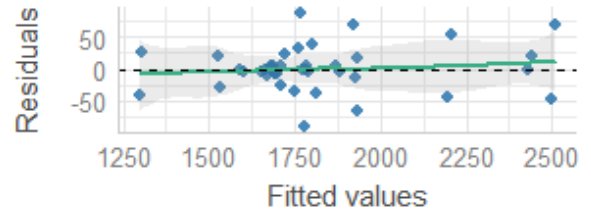
Model-predicted lines should resemble observed data



— Observed data — Model-predicted data

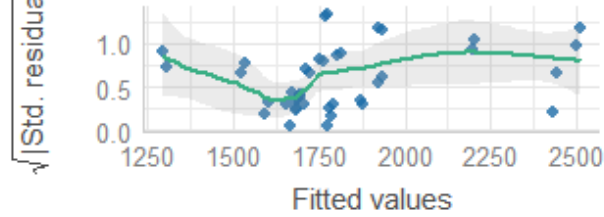
Linearity

Reference line should be flat and horizontal



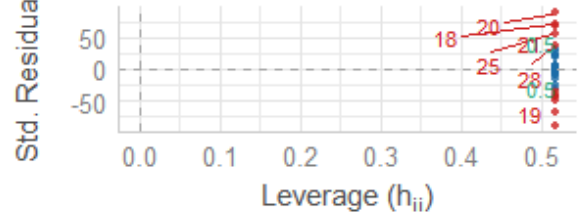
Homogeneity of Variance

Reference line should be flat and horizontal



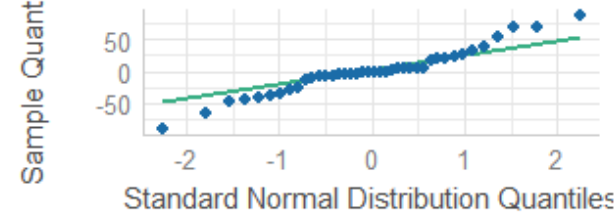
Influential Observations

Points should be inside the contour lines



Normality of Residuals

Points should fall along the line



Normality of Random Effects (individual)

Points should be plotted along the line

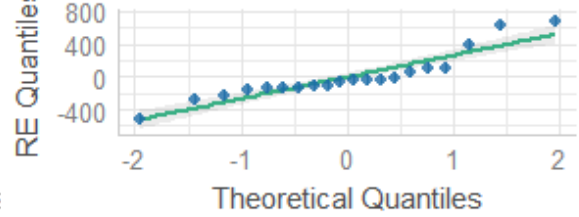
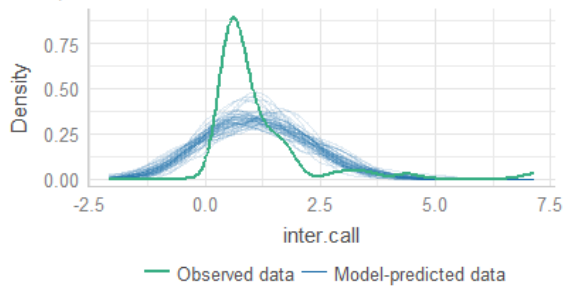


Figure S7. Performance of the model: bandwidth \sim exp + (1|individual).

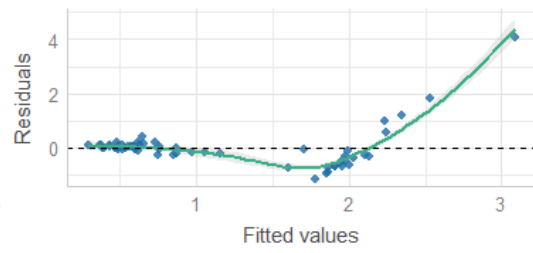
Posterior Predictive Check

Model-predicted lines should resemble observed data line



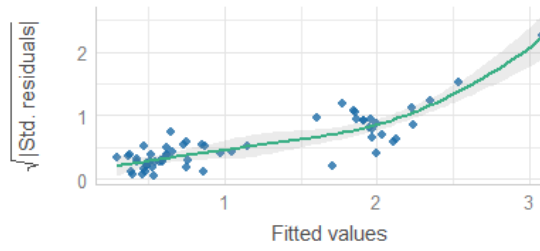
Linearity

Reference line should be flat and horizontal



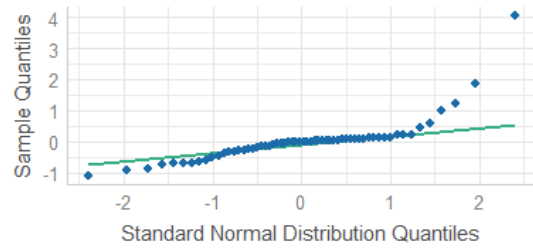
Homogeneity of Variance

Reference line should be flat and horizontal



Normality of Residuals

Dots should fall along the line



Normality of Random Effects (individual)

Dots should be plotted along the line

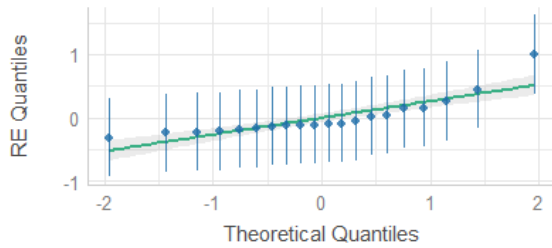
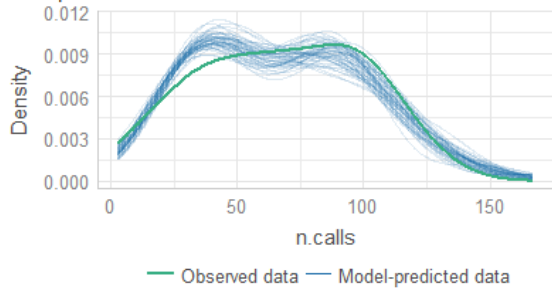


Figure S8. Performance of the model: interval between calls $\sim \exp + (1|\text{individual})$.

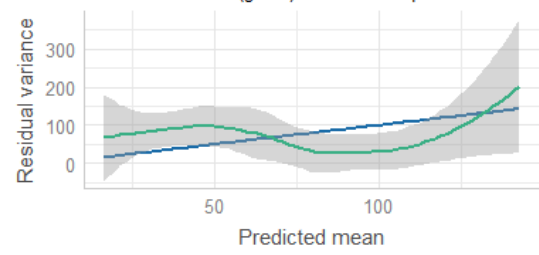
Posterior Predictive Check

Model-predicted lines should resemble observed data line



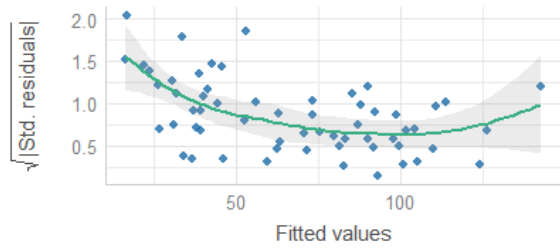
Overdispersion and zero-inflation

Observed residual variance (green) should follow predicted residual



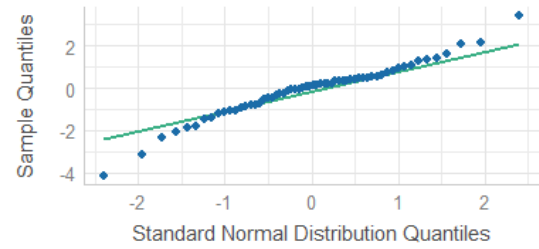
Homogeneity of Variance

Reference line should be flat and horizontal



Normality of Residuals

Dots should fall along the line



Normality of Random Effects (individual)

Dots should be plotted along the line

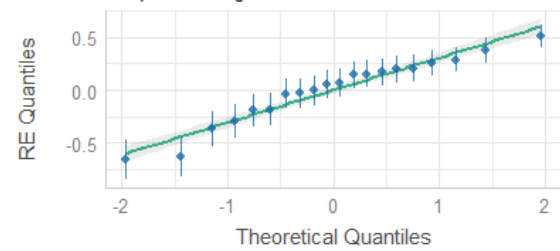


Figure S9. Performance of the model: number of calls $\sim \text{exp} + (1|\text{individual})$.